

XXX.—Notes on *Fossorial Hymenoptera*.—XII.

By ROWLAND E. TURNER, F.Z.S., F.E.S.

On some new Oriental Species.

THE species described in this paper were sent to the British Museum by the Agricultural College, Coimbatore, S. India, by Mr. G. E. Bryant and by Mr. O. S. Wickwar, of Colombo.

Family Bethyliidæ.

Subfamily BETHYLINÆ, Ashm.

Genus PRISTOCERA, Klug.

Pristocera eironeformis, sp. n.

♀. Aptera, rufo-ferruginea; abdomine nigro, apice fusco-ferrugineo.

♀. Head subrectangular, slightly narrowed posteriorly, about one-third longer than the greatest breadth, rather deeply punctured, the punctures more or less confluent longitudinally, clypeus with an elevated median carina. Antennæ thirteen-jointed, another very small joint apparently almost concealed in the apex of the scape. Pronotum shining, very sparsely punctured, much narrower than the head, subrectangular, nearly half as long again as broad, the pleuræ finely and sparsely punctured. Median segment a little longer than the head, forked at the base and narrowed behind the fork, then gradually broadened to the apex, smooth and shining, with distinct marginal carinæ on the sides; the posterior slope oblique, finely punctured at the base, from the punctures spring short fulvous hairs. Abdomen smooth and shining. Legs short, the intermediate tibiæ strongly spinose, hind tibiæ without spines.

Length 7 mm.

Hab. Pattikonda, Kurnool District, S. India; September.*Calyozina flavipennis*, sp. n.

♂. Niger; antennarum lamellis 5 apicalibus, tegulis, tibiis anticis subtus, tarsisque anticis brunneo-testaceis; alis flavis, venis flavo-testaceis.

♂. Head rather closely but not coarsely punctured, no longer than broad, strongly rounded at the posterior angles. Lamellæ of the antennæ very long, on the middle joints from three to four times as long as the joint itself. Pronotum

narrowed anteriorly, rather shorter in the middle than the breadth on the anterior margin, shallowly punctured, with a low median longitudinal carina, the punctures a little larger than those on the head. Mesonotum shallowly and rather closely punctured, the parapsidal furrows converging towards the apex, scutellum almost smooth. Median segment a little broader than long, almost vertically truncate posteriorly, the face of the truncation smooth, with a low median carina bordered by a crenulated groove on each side, separated by a carina from the dorsal surface; a carina on the dorsal surface in the middle from the base to the apex, with two carinæ on each side distinctly converging towards the apex, the intermediate spaces finely transversely striated, the lateral margins also raised and forming marginal carinæ. Abdomen smooth, the two basal segments shining; the apical segments very minutely punctured, with a few black hairs. Radius not much bent, reaching about halfway from the stigma to the apex of the wing.

Length 7 mm.

Hab. Mt. Matang, Sarawak, 3000 feet; December (*G. E. Bryant*).

This is near *ramicornis*, Enderl., but differs in the greater length of the lamellæ of the antennæ, in the shape of the pronotum, the sculpture of the median segment, and in colour. To this genus belongs *Calyza rufiventris*, Kieff., from Queensland. Whether the antennal distinctions on which Enderlein relies in founding his genus are sufficient to separate it from *Calyza* is open to question.

Family Scoliidæ.

Subfamily *ELIDINÆ*, Turn.

Genus *ELIS*, Fab.

Elis (Mesa) crassepunctata, sp. n.

♂. Niger; capite, antennis articulis 2 basalibus, prothorace, tibiis tarsisque anticis rufo-ferrugineis; abdomine nigro, cæruleo-iridescenti; alis dimidio apicali fusco-violaceis.

♂. Clypeus with a prominent carina from the base, not reaching the apex. Front coarsely punctured, rugose, vertex shining and rather sparsely punctured. Antennæ short and stout, scarcely as long as the thorax and median segment combined, the prominence above the base of the antennæ very broad and distinctly bilobed. Head slightly narrowed behind the eyes, much broader than the pronotum, which is

longer than the mesonotum and has the anterior margin transverse, with obscure transverse broken striæ on the anterior half and rather sparse punctures towards the posterior margin. Mesonotum, scutellum, and mesopleuræ very coarsely punctured-rugose. Median segment very coarsely reticulate, abruptly truncate posteriorly, with a transverse marginal carina at the apex of the segment before the truncation, the surface of the truncation punctured-rugose. Abdomen shining, sparsely punctured, the basal segment shorter than the second, nearly as broad at the base as at the apex, truncate at the base, with a low transverse carina above the truncation. Seventh segment not incised at the apex; the recurved spine of the hypopygium well developed. Second abscissa of the radius shorter than the third by about one quarter; first recurrent nervure received just beyond the middle of the second cubital cell.

Length 10 mm.

Hab. Coimbatore, S. India; July.

This is very near *E. dimidiaticornis*, Bingham, but differs in the colour of the head, prothorax, antennæ, and anterior legs. The antennæ do not taper towards the apex as much as in *dimidiaticornis* and are rather more widely separated at the base. In *dimidiaticornis* the second abscissa of the radius is fully as long as the third, and the second cubital cell is less strongly produced towards the base on the cubitus. The very long second abscissa of the radius characteristic of *dimidiaticornis* may possibly not be constant, as in the female *E. tricolor*, Sm., there is certainly a tendency to variation in this respect. The present species approaches *E. tricolor*, Sm., more nearly in colour than *dimidiaticornis*. But I feel some doubts as to the specific difference, and think it quite possible that this will not prove to be more than a local form.

Family Psammocharidæ.

Psammochares atalanta, Sm.

Agenia atalanta, Sm. Journ. Proc. Linn. Soc., Zool. ii. p. 94 (1857). ♂.
Pseudagenia atalanta, Kohl, Verh. zool.-bot. Ges. Wien, xxxiv. p. 42 (1884).

Pompilus cariniscutis, Cam. Journ. Straits Br. Roy. Asiatic Soc. xxxvii. p. 91 (1902).

Psammochares nudatus, Sm.

Pompilus nudatus, Sm. Cat. Hym. B.M. iii. p. 133 (1855). ♀.
Pompilus cassius, Nurse, Journ. Bombay Nat. Hist. Soc. xiv. p. 84 (1902). ♀.
Pompilus horatius, Nurse, Journ. Bombay Nat. Hist. Soc. xiv. p. 84 (1902). ♂.

I think there can be little doubt that these names refer to one species. Smith's type was from Trebizond, but there are specimens in the British Museum from Karachi (*E. Comber*), Mt. Abu (*Nurse*), and also in the present collection from Coimbatore. The specimen marked *cassius*, collected by Nurse and acquired by P. Cameron, is very much smaller than the usual form, and the striæ on the median segment are less distinct, but the latter character varies considerably in the larger specimens.

Psammochares detectus, Cam.

Pompilus familiaris, Sm. Descr. New Sp. Hym. p. 147 (1879, nec Smith, 1855). ♀.

Pompilus detectus, Cam. Mem. Manch. Lit. & Phil. Soc. (4) iv. p. 474 (1891).

Pompilus reflexus, Bingham. Fauna Brit. India, Hym. i. p. 159 (1897, nec Smith).

Bingham was wrong in his identification of this species, though it is nearly allied to *reflexus*, Sm. In *detectus* the third cubital is petiolate; in *reflexus* the third abscissa of the radius is half as long as the second; in *detectus* the posterior ocelli are quite as far from each other as from the eyes, in *reflexus* distinctly nearer together. Bingham's specimens from Tenasserim have the third cubital cell pointed on the radius, not petiolate, and the ocelli as in *detectus*. Smith's type is from Sumatra.

Hab. Palur, S. India; Barrackpore, Bengal; Sumatra.

Family Crabronidæ.

Subfamily PEMPHREDONINÆ.

Stigmus marginicollis, Cam.

Psen marginicollis, Cam. Entomologist, xli. p. 243 (1908).

Passalæcus carinicollis, Cam. MS. ?

This species is undoubtedly a *Stigmus*. I cannot find that the name *Passalæcus carinicollis* has been published, but a specimen bearing that name and marked as the type by Cameron is in the British Museum, where is also the type of *marginicollis*. The species also occurs at Penang. It is very near *S. congruus*, Walk., from Ceylon, but the petiole is rather longer in that species.

Spilomena obliterated, sp. n.

♀. Nigra; antennis, tegulis pedibusque flavo-testaceis; mandibulis flavis, apice nigris; alis hyalinis, venis pallide testaceis; vena transversa cubitali prima obliterated.

♀. Antennæ a little shorter than the thorax and median segment combined, the scape more than half as long as the flagellum, the first joint of the flagellum longer than the second. Eyes converging a little towards the vertex, posterior ocelli about twice as far from the eyes as from each other. Head and thorax very minutely punctured; the head much broader than the thorax; clypeus with a median carina, which is continued on the front, almost reaching the anterior ocellus; antennæ inserted far apart on the sides of the clypeus; front concave in the middle, with a smooth groove on each side of the median carina. Pronotum small and much lower than the mesonotum, the angles reaching to the tegulæ. Median segment very coarsely reticulate; the basal area well defined, large, and broadly triangular, with two short longitudinal carinæ at the base; the posterior truncation almost vertical, with a small tooth on each side near the middle, the surface of the truncation reticulate. Abdomen subpetiolate, smooth and shining. Stigma twice as long on the costa as the greatest breadth, only one cubital cell, the recurrent nervure received at the middle of the cubital cell; the transverse cubital nervure received by the radius distinctly nearer to the stigma than to the apex of the radial cell.

Length 4 mm.

Hab. Penang; October (*G. E. Bryant*).

The neuration differs from typical *Spilomena* in the absence of the first transverse cubital nervure and in the more elongate stigma.

Subfamily AMPULICINÆ.

Ampulex bryanti, sp. n.

♂. Niger; prothorace elongato, rufo; alis hyalinis, ante apicem leviter infumatis.

♂. Clypeus strongly convex, with a median carina, broadly rounded at the apex. Antennæ shorter than the thorax and median segment combined, the second joint of the flagellum as long as the first and third combined. Front longitudinally rugulose, a low frontal carina reaching the anterior ocellus, vertex opaque, almost smooth. Head much produced and narrowed behind the eyes, a circular depression on the vertex close to the posterior margin. Pronotum very narrow, slightly widened posteriorly, more than twice as long as the greatest breadth, punctured, with a deep median sulcus. Mesonotum, scutellum, and mesopleuræ coarsely punctured-rugose. Median segment longer than the breadth

at the base, with the usual carinæ; the spines near the apical angles strong and curved, with a distinct incision at the base, situated a little before the base of the posterior truncation. Basal joint of the hind tarsus half as long again as the petiole; abdomen smooth and shining, the third segment coarsely longitudinally rugose, the second segment a little longer than its greatest breadth. Fourth joint of the tarsi short, not reaching the middle of the apical joint. Two cubital cells, the second transverse cubital nervure joins the radius at a distance from the apex of the radial cell equal to the length of the first transverse cubital nervure.

Length 10 mm.

Hab. Matang, Sarawak; February (*G. E. Bryant*).

Nearest to *ruficornis*, Cam.

Ampulex pilosa, Cam.

Ampulex pilosa, Cam. Ann. & Mag. Nat. Hist. (7) v. p. 37 (1901).

Hab. Assam. Also taken by Mr. Bryant on Mt. Matang in Sarawak.

This species is very near *sybarita*, Kohl, from Java, but differs in the shape of the second dorsal segment, which is distinctly longer than its median breadth in *pilosa*. There is also a slight difference in the sculpture of the pronotum.

Subfamily *SPHECINÆ*.

Genus *CHLORION*, Fabr.

Subgenus *HARPACTOPUS*, Sm.

Chlorion (Harpactopus) subfuscatus, Dahlb.

Hab. S. Europe; N. Africa; N. China; Coimbatore, S. India.

Specimens from Coimbatore differ from the typical form in the deeper longitudinal median and lateral furrows on the median segment, but are certainly not specifically distinct. I do not know that this species has been previously recorded from India.

Chlorion (Isodontia) chrysorrhæus, Kohl.

Sphex apicalis, Sm. Cat. Hym. B.M. iv. p. 253 (1856, nec Harris).

Sphex (Isodontia) chrysorrhæus, Kohl, Ann. naturh. Hofmus. Wien, v. p. 371 (1890).

Sphex (Isodontia) hewitti, Cam. Journ. Straits Br. Roy. Asiat. Soc. xlv. p. 119 (1906).

Hab. Sumatra; Borneo.

Chlorion (Isodontia) maia, Bingham.

Sphex maia, Bingham, Journ. Bombay Nat. Hist. Soc. viii. p. 379 (1893).

Sphex malayanus, Cameron, Journ. Straits Br. Roy. Asiat. Soc. xxxvii. p. 134 (1902).

The localities in the British Museum collection range from Borneo to Sikkim.

Subfamily *GORYTINÆ*.*Gorytes cærulescens*, sp. n.

♀. Nigra, ubique dense punctata; segmento mediano striato-reticulato; abdomine obscure cærulescenti; alis pallide fusco-hyalinis.

♀. Mandibles broad, tridentate. Clypeus broad, the apical margin transverse. Second joint of the flagellum equal in length to the third; the antennæ inserted further from each other than from the eyes. Head finely and rather closely punctured, front and clypeus covered with white pubescence, the inner margins of the eyes parallel. Posterior ocelli much further from each other than from the anterior, a little further from each other than from the eyes. The antennæ are not thickened towards the apex. Pronotum sunk a little below the level of the mesonotum, almost vertical. Thorax rugosely punctured, mesopleuræ longitudinally striated, not separated by a carina from the mesosternum. Median segment about as long as the scutellum, the basal area coarsely longitudinally striated, the dorsal surface outside the basal area coarsely obliquely striate-reticulate, the segment rather abruptly truncate posteriorly, the surface of the truncation slightly concave and irregularly rugose-striate; the sides of the segment indistinctly striated. Abdomen subsessile, the basal segment only two-thirds of the length of the second, only slightly narrowed to the base, much broader than long; the second segment angular at the base beneath, about twice as broad as long; pygidial area narrowly triangular, almost smooth, with a median longitudinal carina; the whole abdomen closely and finely punctured, with sparse white pubescence. Second abscissa of the radius a little longer than the third; both recurrent nervures received by the second cubital cell, the first at two-fifths from the base, the second close to the apex. Cubitus of the hind wing originating far beyond the apex of the anal cell. Hind tibiæ smooth.

Length 12 mm.

Hab. Kandy, Ceylon; November (*O. S. Wickwar*).

In many structural points this species is near the *mystaceus* group, in the form of the second ventral segment, the neurotation of the hind wing, the form of the antennæ, the position of the ocelli, the parallel eyes, and the coarse sculpture of the median segment all showing a close approach to that group. In structural points it is very near *homonymus*, Schulz (*politus*, Bingham, nec Smith), but differs widely in colouring.

Gorytes matangensis, sp. n.

♀. Nigra; pedibus ferrugineis; segmentis dorsalibus 2-4 flavociliatis; alis pallide flavo-hyalinis, area radiali late infumata, venis fuscis, stigmatibus tegulisque testaceis.

♀. Head broad, finely punctured. Inner margins of the eyes sinuate, not distinctly convergent towards the clypeus. Thorax finely rugose, the suture between the mesonotum and scutellum distinctly foveolate; sternum with an indistinct longitudinal carina; mesopleuræ longitudinally striated; postscutellum and basal area of the median segment coarsely longitudinally striated, the apical slope of the median segment coarsely reticulate. Abdomen very minutely punctured and pubescent, the fulvous-yellow pubescence forming short ciliæ at the apex on dorsal segments 2-4. Second ventral segment distinctly angular at the base; pygidial area small and very narrow. Tibiæ without spines, fore tarsi very feebly ciliate. Second abscissa of the radius as long as the third, both recurrent nervures received by the second cubital cell, the first at one-third from the base, the second close to the apex. Cubitus of the hind wing originating far beyond the apex of the anal cell. The first transverse cubital nervure is bent near the base, and sends off a short vein which is continued as a scar to the base of the stigma.

Length 12 mm.

Hab. Mt. Matang, Sarawak, 1000 feet (*G. E. Bryant*); February.

This is very near *stenopygus*, Handl., but in that species the suture at the base of the scutellum is not foveolate, and the clypeus, pronotum, and abdomen are marked with yellow.

Subfamily NYSSONINÆ, D. T.

Genus NYSSON, Latr.

Four species of this genus were included in the collection, but unfortunately only one is represented in both sexes. I give a key to the species described here:—

Nysson decoratus, sp. n.

♂. Niger; crasse punctatus; segmentis dorsalibus 1-5 fascia latissima utrinque, segmento sexto macula utrinque flavis; alis fusco-hyalinis.

♀. Mari simillima; clypeo margine antico distincte bidentato.

♂. Clypeus almost transverse on the anterior margin, without teeth. Tenth joint of the flagellum as long as broad, eleventh distinctly longer, apical joint about equal to the penultimate in length and strongly curved at the apex. The frontal carina is present, but not very strongly developed. Posterior ocelli further from the eyes than from each other. Head and thorax coarsely punctured, the thorax more coarsely than the head, a more finely punctured space on which is situated a small yellow spot behind each of the posterior ocelli. Median segment as long as the scutellum, coarsely longitudinally striated on the basal area, the spines at the apical angles long and covered with dense white pubescence. Second ventral segment strongly rounded, not angular at the base, second to fourth ventral segments with a fringe of long grey hairs at the apex. Abdomen very closely and minutely punctured, with sparse larger punctures, the two apical segments more coarsely punctured; seventh dorsal segment broadly rounded at the apex; the sixth and seventh with well-marked longitudinal carinae at the sides produced into short spines at the apical angles. Hind tibiae strongly serrate. Radial cell narrowly rounded at the apex; the cubitus of the hind wing originates far beyond the apex of the anal cell.

♀. Similar to the male, but the clypeus has two distinct teeth near the middle of the anterior margin.

Length, ♂ 8 mm., ♀ 9 mm.

Hab. Coimbatore, S. India; July and August.

The male is the type.

Nysson basalis, Sm.

Two male specimens in the collection correspond fairly well to Smith's description, but in both the wings are clear hyaline, with a faint fuscous apical margin, and in one specimen the legs are fusco-ferruginous. The clypeus is rather feebly bidentate near the middle of the apical margin; the frontal carina distinct. The tenth joint of the flagellum is broader than long, the eleventh longer than broad, the apical joint rather strongly curved. Second ventral segment not very strongly rounded, but not angular at the base;

ventral segments 2-4 with a fringe of long white hairs at the apex. Hind tibiæ serrate, but not very strongly so. Radial cell narrowly rounded at the apex, the cubitus of the hind wing originating far beyond the apex of the anal cell. The two apical dorsal segments are carinated laterally and produced into acute teeth at the apical angles; the apical segment is bluntly produced between the apical teeth, but can hardly be described as rounded, as in Smith's description.

Hab. Coimbatore, S. India; June 1912 (*T. B. Fletcher*).

Both specimens taken on the same day.

There is a female in the British Museum collection from Nasik, W. India, in which the wings are fusco-hyaline.

Nysson dubitatus, sp. n.

♀. Nigra; antennis subtus fusco-ferrugineis, segmento abdominali primo pedibusque ferrugineis; macula parva utrinque post ocellos, segmentisque dorsalibus 1-5 macula magna transversa flavis; mandibulis basi flavis, apice fusco-ferrugineis; alis hyalinis apice leviter infumatis; tegulis testaceis.

♀. Clypeus bidentate near the middle of the apical margin; second joint of the flagellum no longer than the third; the cheeks are not margined. Head rather shallowly punctured, the frontal carina between the base of the antennæ rather indistinct. Thorax coarsely punctured; the median segment a little shorter than the scutellum and longitudinally carinate on the basal area, the carinæ about six in number, the apical angles clothed with whitish pubescence and produced into acute spines. Abdomen closely punctured, the basal segment more coarsely than the others; second ventral segment rounded beneath; pygidial area punctured-rugose. Hind tibiæ serrate, but not strongly. Radial cell narrowly rounded at the apex; cubitus of hind wing originating far beyond the apex of the anal cell.

Length 6 mm.

Hab. Coimbatore, S. India; July.

This species is distinct from *rugosus*, Cam., in which the hind tibiæ are unarmed, the pygidial area different in sculpture, and the distribution of the yellow markings very different. It also appears to be quite distinct from *erythropoda*, Cam. I only know Cameron's two species by the description. *N. violuceipennis*, Cam., is a very distinct species.

Subfamily *LARRINÆ*.Genus *PARAPIAGETIA*, Kohl.*Parapiagetia wickwari*, sp. n.

♂. Niger, albo-pilosus; mandibulis basi, scapo apice, tegulis, tibiis tarsisque testaceis; abdomine segmento primo toto, secundoque lateribus ferrugineis; alis hyalinis, venis nigris, stigmatе costaque testaceis.

♂. Clypeus produced into an acute spine in the middle of the apical margin; mandibles deeply incised on the outer margin; third joint of the flagellum longer than the second. Head and thorax very minutely and closely punctured, more or less covered with shining white pubescence; eyes slightly divergent towards the clypeus; ocelli situated on a rounded prominence, the posterior pair oval and near together. Median segment longer than broad, minutely punctured and rather sparsely clothed with long white pubescence. Abdomen petiolate, the first segment about one-third longer than the second, very narrow at the base, gradually widened to the apex, where it is about half as wide as the apex of the second segment; apical segment very narrowly rounded at the apex. Radial cell narrowly truncate at the apex; the three abscissæ of the radius almost equal in length. Hind tibiæ with five short spines on the outer margin.

Length 7 mm.

Hab. Colombo, Ceylon; March 1909 (*O. S. Wickwar*).

A female specimen in the British Museum from Karachi (*E. Comber*) is probably of the same species. The clypeus is shallowly emarginate in the middle of the apical margin, the angles of the emargination produced into short teeth. The second joint of the flagellum is only very slightly shorter than the third. The median segment has a few very delicate and indistinct transverse striæ at the base and more distinct oblique striæ on the sides of the segment. The recurrent nervures are distinctly nearer together on the cubitus, and the femora are wholly testaceous, not only at the apex as in the male. The basal joint of the fore tarsus has six spines on the outer margin, each spine about one-quarter as long as the joint, and there are two or three spines on the hind tibia in excess of the number in the male.

The clypeus is quite distinct from *P. odontostoma*, Kohl. The genus does not seem to have been previously recorded from the Indian region. Cameron states that his genus *Odontolarra* is near *Parapiagetia*, but a specimen of *O. nigra*, Cam., labelled by him "type," is undoubtedly a *Lyroda*, the

ocelli being normal. The name *Odontolarra* must therefore sink.

Liris ducalis, Sm.

Larrada ducalis, Sm. Journ. Proc. Linn. Soc., Zool. iv. p. 84, Suppl. (1860).

Liris nigripennis, Cam. Mem. Manch. Lit. & Phil. Soc. (4) ii. p. 131 (1889).

These seem to me to be identical. A specimen from Camerons collection taken at Poonā, and marked by him as the type *violaceipennis* (probably an error for *nigripennis*), is only a male of *ducalis*.

XXXI.—*Some Further Notes on Lamellicorn Beetles of the Subfamily Dynastinae*. By GILBERT J. ARROW.

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[Plate XIII.]

M. SEMENOV (Rev. Russe Ent. xii. 1912, p. 499) has objected to my treatment of his generic name *Crator* as a synonym of *Podalgus*, Burmeister, on the ground that the first species attributed to the latter by Burmeister is its proper type, and that Lacordaire was wrong in restricting it to the second species. Happily, such a rule as this has never been accepted, or many well-established genera would fall. Burmeister himself began the process of dismembering his composite genus, but without re-defining it, and Lacordaire, in doing this, was entitled to take as its type any of the species left in it by its author, and naturally selected the African one indicated, although not named, as the type by Burmeister.

By an unfortunate coincidence, my paper upon the Madagascan genus *Lonchotus* was printed without the knowledge that Herr Sternberg had, a short time previously, published descriptions of several species of the genus. Herr H. Prell has kindly sent me Sternberg's types for comparison with mine, and I have found that *L. rugosicollis*, Stornb., is *L. borealis*, Arrow, while *L. splendens*, Stornb., is the species I regard as *L. lentus*, Burm. The name *curticollis*, Stornb., must be dropped, being based upon a deformed specimen (apparently a female of *L. lentus*), whose thorax shows exactly the same abnormal condition as the specimen of *Bothynus simplicitarsus*, Burm., described as *B. monstrosus*